

To: Aesook Byon-Wagner
From: Duane Plant
Re: Review of NuMi RAW water system

Comments and questions.

Absorber RAW system:

It may be beneficial to install one or more conductivity probes in the full flow part of the system as well as the probes now measuring the ion beds only.

Consider some simple control for the various water modules within the absorber enclosure. It seems that there will be a large difference in heat load across all of the modules. Perhaps just a one piece, no moving parts, limiting orifice or squeezed pipe would suffice to but the flow where it is needed most.

We should make sure that the resin beds we will be using are capable of the radiation levels and, temperatures that we will be exposing them to. Temperature problems have "gotten" us in the past.

It may be wise to insert a low cost SS sieve filter downstream of the ion bed in each system. If the sieve was large in size, but small enough to get only resin beads, it probably would not be a high maintenance item.

Decay pipe cooling system:

We may need high level alarm for the expansion tank in the decay pipe system. This would alarm if there is a leak in the heat exchanger.

General comments:

Think about adding klixons to all pumps. I understand that some of the pump motors are small in size but even small pumps can fail and break their castings. A klixon set at a relative high temperature may not protect the pump from some damage but we should be able to set the trip point to something before a catastrophic failure that could spill water.